



Using PLC's to Identify and Implement Effective Interventions
Collaborative Inquiry/Research Project
Thames Valley DSB – September 2009

Grade 10 Applied Working Team

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Action Research Question: What impact does identifying and implementing effective interventions through the use of PLC's have on achievement levels for students at risk in grades 9 & 10?

Introduction

The purpose of semester one of the proposed three semester project was to establish a professional learning community (PLC) focusing on identifying students' greatest learning needs and, sharing and learning about instructional and assessment strategies to improve student learning and achievement.

Presently, secondary school teachers within Thames Valley DSB have limited opportunities for cross-department dialogue and collaboration. Thames Valley DSB is interested in identifying and sharing best practices, within and across our schools, to assist in meeting the needs of our students, with a particular focus on our at-risk students. Establishing and evaluating the impact of models to meet this objective is a critical first step to improving learning for teachers and, ultimately, students.

The objective of this phase of the project was to provide secondary school teachers of at-risk students with the opportunity to collaboratively review and interpret achievement data, engage in cross-department dialogue regarding student learning needs and to share and learn about strategies for addressing these needs. The overall goal of the project is to improve achievement of at-risk students.

Background

Research indicates professional learning communities facilitate opportunities for developing a shared and focused vision and plan for improving student achievement, engaging in reflective practice and supporting professional growth (Bolam et al., 2005 and Schmoker, 2006).

In a comprehensive review of the literature, Dr. Shirley Hord (1997) summarized positive outcomes of professional learning communities for both teachers and students. Findings of the review identified, among others, reduced professional isolation, shared responsibility for improved student achievement, commitment to adapting teaching practices to meet the needs of students, and "powerful learning that defines good teaching and classroom practice, that creates new knowledge and beliefs about teaching and learners" (*Outcomes of Professional Learning Communities for Students and Staffs*). Benefits for students highlighted in the review include improved achievement for all students with a narrowing of achievement gaps, improved attendance and a reduction in school leaver rates.

In order to achieve positive outcomes, however, effective professional learning communities must first be established and operationalized. According to the Ministry of Education's Literacy and Numeracy Secretariat (2007), there are six key components of an effective PLC: student centered; evidence driven; respectful, safe and collaborative; process oriented; supported by strong leadership; and, aligned with best practices and school/system priorities.

Description of Professional Learning Community

The professional learning community was established at a secondary school identified as requiring additional support through the Ministry of Education's Student Success Action Plan: Differentiated Support for Some Schools initiative. Based on review of the Student Success



Indicators, two schools showing improvement and two schools yet to improve were identified and received additional support in the form of funding and resources, both material and human.

Thames Valley DSB's original proposal for the Collaborative Inquiry/Research Projects sponsored by the London-Region MISA Professional Network Centre involved establishing a cross-school PLC; however, through further discussions with school administrators, it became apparent that many staff at the four identified schools had never even been involved in a PLC within their own school. Following further dialogue between system and school leaders, one school Administrator requested support in establishing a PLC.

School Context

The PLC was established in a large London secondary school with a population of approximately 800 students. According to data collected by the school in 2007-2008, 59% of the students are recent immigrants or urban aboriginal students. Almost half (n= 128) of the grade 9 and 10 students surveyed last school year said English was not the first language they learned at home and half of these students said they do not currently speak English at home.

Student achievement within this school; specifically, pass rates on the OSSLT and in grade 9 and 10 applied Mathematics and English, as well as credit accumulation in grades 9 and 10, has been among the lowest in Thames Valley DSB for the past three years.

Establishing PLC Model

Identifying teaching staff to participate in the professional learning community was the first step in its inception. The school's Administrator and Student Success Teacher (SST) met with a Gr. 7-12 Learning Coordinator and Research and Assessment Associate to review the Student Success Indicators and contextual data, including school and staff culture. Based on review of the evidence, the school decided to focus on students enrolled in grade 10 compulsory applied courses. Staff teaching these courses in semester 2 of 2008-2009, along with their Department Heads, were asked to participate in the professional learning group¹. The group was comprised of 14 school staff members (*i.e. 12 teachers, the Principal and SST*) and was facilitated by three system staff members (*i.e. two Gr. 7-12 Learning Coordinators and a Research and Assessment Associate*).

Teaching staff were asked to participate in five half day off-site sessions co-facilitated by Program Services (*i.e. two Gr. 7-12 Learning Coordinators*) and Research and Assessment Services, and one half day planning session in collaboration with colleagues and/or subject specific Learning Coordinators. Meetings started February 10, 2009 and occurred every 2 to 3 weeks until May 12, 2009.

The process used in the PLC was modeled after the Teaching Learning Critical Pathways (TLCP) framework introduced in 2008-2009 by the Literacy and Numeracy Secretariat in elementary schools. Key components of the process involved using evidence to identify students' greatest learning needs, developing learning plans to address identified needs, implementing plans, reflecting on challenges and successes of the plans, and, discussing next steps.

Implementation of PLC Model

Step 1: Review Evidence and Identify Learning Needs (February 10, 2009)

During the first half day session, teaching staff were asked to bring classroom assessment data (*i.e. Markbook data and final evaluation breakdowns*) for their respective courses from semester 1 of 2008-2009. For teachers who did not teach the course in semester 1, this involved obtaining the information from another/other teacher(s).

¹ It is important to note that these individuals did not volunteer.



Assessment data is organized in Markbook by assessment type (*e.g. multiple choice, short answer, essay*), as well as by curriculum expectations. In collaboration with colleagues teaching the same course and/or Department Heads, PLC members were asked to review Markbook and final evaluation data to identify the following: the types of assessments used throughout the year and how well the class as a whole performed on the various assessment types (*see appendix A for a copy of the instructions and template provided*) and, the performance of the class as a whole on specific curriculum expectations (*see appendix B for a copy of the instructions provided*).

Following the review of the data, PLC members were asked to identify and prioritize student learning needs within their subject group and then share this information with the whole group (*see appendix C for a summary of performance by assessment type and appendix D for a sample of student performance by curriculum expectations*). As a larger group, PLC members discussed cross-curricular learning needs of students (*see appendix E for a sample of cross-curricular needs identified*).

Step 2: Addressing "Elephant in the Room" (February 26, 2009)

Initially, sharing experiences and knowledge was the planned focus for the second half day session; however, it became apparent following the first session that further review of evidence was necessary to assist with the learning plan process. More specifically, there were a number of teaching staff who identified absenteeism as the primary barrier to student success.

Scattergrams were created to illustrate the relationship between final marks and absenteeism (*i.e. % of required instructional time absent*) for each course. Charts for three of the six courses were presented to the larger group for discussion. PLC members compared relationships between subject areas labeled A, B & C (*see appendix F for the sample scattergrams*). Discussion regarding possible reasons for the similarities and differences ensued, including beliefs about the nature of various courses and possible influences of assessment practices.

Following the whole group discussion, each course group received their own data and had the opportunity to discuss what they saw, suggest reasons for this and/or pose questions. In some cases, teachers decided to use this information to assist with setting targets (*e.g. decrease the number of students achieving a final mark below 55% who attend class more than 60% of the time*). Other teachers decided to focus on raising and leveling the bar for all students. PLC members shared their targets and rationale with the larger group.

Step 3: Developing Learning Plan to Meet Identified Needs (March 11, 2009)

During the third half day session, PLC members received Learning Plan templates, lists of references (*e.g. differentiated instruction and assessment materials*) and contacts (*i.e. subject specific Learning Coordinators*). Based on the learning needs identified in session one, PLC members were asked to collaboratively develop a learning plan with their course partner(s). Teachers were asked to include the following components in their plan: specific curriculum expectations to be met in 2-4 week learning block, diagnostic assessment, summative evaluation tool, specific strategies to address learning needs, methods for documenting implementation, formative assessment and, required resources (*see appendix G for a copy of the Learning Plan Template*).

Teachers began developing their learning plan with colleagues during the session and were informed they would have another half day of release time to meet with colleagues and/or Learning Coordinators to finish and/or modify their plan. In some cases, PLC members requested and received additional funding for resources in lieu of the second half day of release.



Step 4: Share Learning Plans and Student Work (April 28, 2009 & May 12, 2009)

PLC members presented their learning plans and student work, where available, during the fifth half day session. Non-threatening strategies were employed to facilitate discussion about the learning plans and provide constructive peer feedback. The purpose of using these techniques was two-fold: to create a safe environment to encourage risk taking and to model strategies that could be used in the classroom.

Presentations were carried forward into the sixth and final half day session as a result of extensive dialogue.

Step 5: Reflection and Next Steps (May 12, 2009)

Following the final presentations of the learning plans, and subsequent discussions, PLC members engaged in reflective dialogue about the PLC process. An electronic survey requesting more specific information about benefits and challenges of the process, as well as suggestions for future PLC models was forwarded to teachers the week following the sixth and final session. Qualitative information was also gathered through unstructured interviews with the school Administrator, the Student Success Teacher and the Learning Coordinators who participated in the process.

It was the original intent to engage in analysis and discussion of achievement results following the implementation of the 2-4 week learning plan; however, each department team progressed along the TLCP continuum at their own pace. English teachers completed the full TLCP, reflected on student learning, adjusted practice, and shared student achievement data from the TLCP learning block. English began another TLCP cycle. PLC members teaching Careers also completed the cycle and shared student work of the culminating activity, but the use of formative assessment to inform practice was unclear.

History teachers completed the cycle and presented some interesting differentiated instruction and assessment strategies. There was no evidence that student data was used to inform or adjust instruction and student final evaluations were not shared.

Teachers of grade 10 applied Science had an overall plan/approach to share and were developing a diagnostic, which was not implemented during the semester.

Math teachers began developing an overall plan and approach. The decision to implement clickers to collect formative assessment data lead them to present data collected by a grade 9 applied math colleague who had been working with similar technology.

It is important to note that a critical element of the PLC model was providing enough time to lay the groundwork for implementation of learning plans and reflection on student outcomes; specifically, establishing rapport and developing trusting and respectful relationships; reviewing and interpreting evidence to inform practice; sharing ideas and strategies; and, developing and implementing learning plans.

Data Collection and Analysis

A mixed methodology research approach was adopted for this project to gather perceptual data from participants and preliminary outcome data for students. As mentioned earlier, PLC members were invited to complete an electronic survey following their participation in the six half day sessions (*see Appendix H for a copy of the survey*).

The survey asked teachers a series of open ended questions about the benefits and challenges of the PLC; more specifically, what the most beneficial and challenging aspects of the PLC were



for their students, for them, for their department and for the school. Teachers were also asked to include general ideas for improving the process.

The second section of the survey asked PLC members for input on establishing a working team model at their school for the 2009-2010 school year. Teachers were asked to identify the following: what student group should be targeted, who should participate, who should take the lead in planning and facilitating the process, how often should the working team meet, when should the working team start meeting, what are some realistic goals for the working team and would you be interested in participating on a similar team next year. Space was provided for additional comments at the end of the survey.

Analysis of the survey was completed by the Research and Assessment Associate who co-facilitated the project. Open ended survey responses were read, coded and grouped according to common themes, while closed ended items were analyzed using descriptive statistics.

In addition to surveying teaching staff, the co-facilitators met with one another to debrief following each session and met with the Principal and SST a number of times throughout the process to gather feedback and, at its conclusion to discuss next steps. Notes taken during the unstructured interviews have been coded and summarized for inclusion in this report.

Student achievement data was also analyzed to establish baselines and review potential impacts of the PLC. Pass rates in grade 10 applied compulsory courses² were calculated by semester for the 2006-2007, 2007-2008 and 2008-2009 school years. Minimum, maximum and mean pass rates for five semesters (excluding semester 2 of 2008-2009) were plotted and compared with pass rates for semester 2 of 2008-2009.

Summary of Findings

Staff Perceptions of PLC Model

Perceptual information was provided by half of the participants (i.e. 5 teaching staff, Principal, SST) and all three facilitators. Based on survey responses and notes taken during discussions with the Principal and SST and among facilitators, the following benefits and challenges were identified:

Benefits of Process

- Opportunity to collaborate with colleagues in a meaningful way
- "Developing a sense of community among teachers"
- Using achievement and attendance information to better understand learning needs of students
- Increased and shared awareness of learning needs of students
- Established more unified and clear approach to addressing learning needs
- Increased awareness of and ideas of how to implement differentiated instruction and assessment strategies

Challenges of Process

- Time out of the class disrupted routines and increased teacher workload
- Identifying high yield strategies to benefit at risk students
- Increased preparation time to organize differentiated activities
- Mandated participation increased time needed to establish safe and trusting atmosphere

During debriefing and planning sessions, several individuals involved with the PLC commented that this process offered teaching staff and school leaders a unique opportunity to learn more

² Calculations include achievement in regular day courses only



about their students, one another and themselves. The model was described by these professionals as a powerful professional development framework that is student and teacher

centered. It was also noted that initial skepticism and discontent expressed by some staff at the beginning of the process appeared to diminish throughout the semester. According to the school Administrator, the amount of student focused discussion and collaboration increased among all PLC members outside of formal meeting times.

Areas for Improvement

Several suggestions on how to improve the process were provided by teaching staff. These included establishing a PLC in which teachers can volunteer to participate, reducing the number of meetings during class time (*i.e. organize meetings during professional development days*), include specific professional development on differentiated instruction and assessment, devote more time to subject specific collaboration and be more explicit about the "purpose" of the PLC.

More specific feedback, provided by teachers on closed ended survey items and in interviews with the Principal and SST, indicates relatively consistent views about establishing a PLC model for the 2009-2010 school year. The majority of staff thinks grade 9 and 10 students should be targeted. One respondent suggested students in grade 10 applied compulsory courses should remain the focus, to allow time for change to occur. Another respondent suggested those teachers who participated this year should continue meeting and focus more on outcomes of implemented plans.

Most of the respondents felt the PLC should include teaching staff, department heads, student success teachers and learning coordinators. One staff member felt the administrator, Research and Assessment Services staff, guidance counselor and students should also be part of the group. Just over half of the staff who responded felt department heads should take the lead in planning and facilitating the process. The remaining felt this role should be filled by learning coordinators.

As highlighted earlier, staff identified the number of meetings as a challenge in the process. Differences in opinion about the frequency and number of meetings exist among staff members who provided input. Some suggested meeting two or three times a semester, while others suggested meeting once a month each semester. Everyone who responded agreed that meetings should begin at the end of the first or beginning of the second month each semester (*i.e. late September or early October and late February or early March*).

Participants were also asked to identify realistic goals for the 2009-2010 PLC. Responses included the following:

- "Developing material that is ready to use in the classroom"
- "Identify teaching methods and assessment practices that are practical and offer opportunities for success to students in applied level classes"
- Improved student achievement

Student Achievement

Analysis of pass rates in grade 10 compulsory courses by semester indicates improvement or no change in semester 2 of 2008-2009 for three of the six courses. Significant increases occurred in English (ENG2P) and Careers (GLC2O) where pass rates were 23% and 10% higher in semester 2 of 2008-2009 than the average pass rate from semester 1 of 2006-2007 to semester 1 of 2008-2009. PLC members teaching these courses completed the TLCP cycle; specifically, they developed and implemented learning plans focusing on identified needs, administered diagnostic and formative assessment throughout the cycle and shared achievement data with the team.



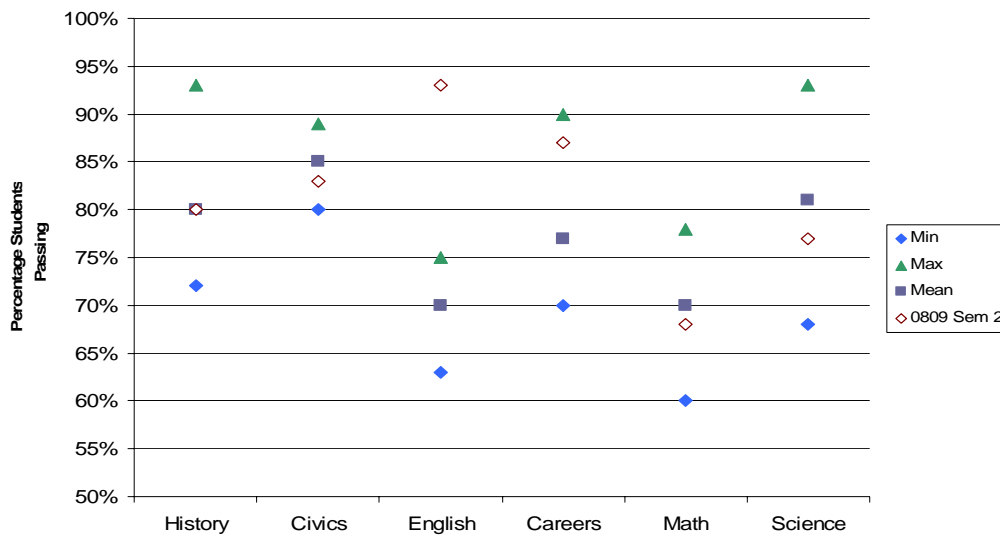
There was no difference between the pass rate for History (CHC2P) in semester 2 of 2008-2009 and the average of the five previous semesters. PLC members teaching History presented differentiated diagnostic and summative assessments along with differentiated instruction strategies contained within their learning plan. There was, however, no discussion of formative assessment.

Pass rates in semester 2 of 2008-2009 for Civics (CHV2O), Math (MFM2P), and Science (SNC2P) were 2%, 2% and 4% below the five semester average respectively, but above the minimum pass rate for the same period. PLC members teaching Civics were also teaching Careers or History. The Administrator was conscience of the extra workload for these teachers

and suggested they focus on Careers and History instead of Civics. While the Math and English teachers developed plans, they did not implement them during semester 2 of 2008-2009.

Mean, maximum and minimum pass rates for semester 1 of 2006-2007 to semester 1 of 2008-2009 and achievement in semester 2 of 2008-2009 are displayed in chart 1 below.

Chart 1: TVDSB Collaborative Inquiry/Research Project: Mean, Maximum and Minimum Pass Rates Semester 1 0607 to Semester 1 0809 and Achievement in Semester 2 0809



It is important to note that change over in staff occurred in a number of these courses over the past six semesters. This is also a consideration when establishing professional learning communities; specifically, should PLC's be comprised of members teaching the same group of students or subject areas or a combination?

Conclusion

Findings presented in the previous section suggest the professional learning community model that was implemented in this collaborative inquiry/research project is an effective framework for collaboration, evidence based decision making and facilitating professional growth.

Addressing the areas for improvement identified by participants is critical to establishing a PLC model that is sustainable and "owned" by its members. More specifically, consideration should be given to making participation voluntary, decreasing the number of meetings during class time, providing more time for departmental level discussions, and providing PD on specific high yield strategies for targeted students. It is also imperative to develop a model where the work



undertaken by the group is more explicit, intentional and focused on student work and outcomes and, where group composition is considered in light of change over in teaching assignments.

While it is too early to attribute changes in pass rates to professional growth occurring as a result of participation in the PLC, this should be used as a longer term measure. The ultimate goal of the PLC model introduced through this project is to improve achievement of at-risk students in secondary school.

References

Bolam, R., McMahon, A., Stoll, L., Thomas, S., Wallace, M., Hawkey, K., & Greenwood, A. (2005). *Creating and sustaining effective professional learning communities*. DfES Research Report RR637. University of Bristol. <http://www.dfes.gov.uk/research/data/uploadfiles/RR637.pdf>

Hord, S. (1997). *Professional learning communities: Communities of continuous inquiry and improvement*. Retrieved September 17, 2009 from <http://www.sedl.org/pubs/change34/2.html>

Schmoker, M. (2006). *Results now: How can we achieve unprecedented improvements in teaching and learning*. Alexandria, VA: Association for Supervision and Curriculum Development.

The Literacy and Numeracy Secretariat. (2007). *Professional learning communities: A model for Ontario schools*. The Literacy and Numeracy Secretariat capacity building series special edition no. 3, Ministry of Education, Ontario. Available at: <http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/>



Appendix B – Instructions for Reviewing Student Performance by Curriculum Expectation



Grade 10 Applied Working Group
Student Performance by Curriculum Expectation

Instructions

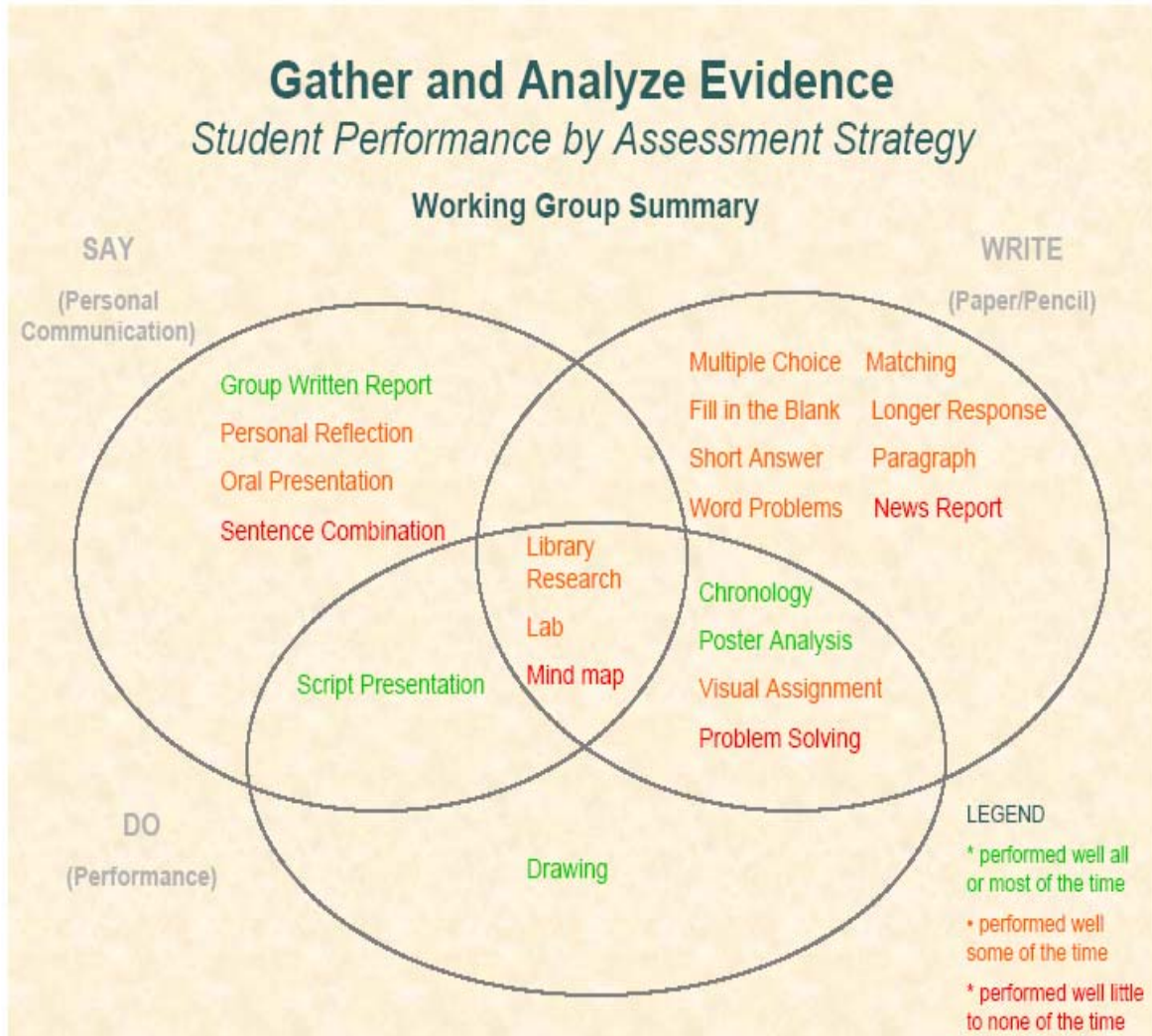
1. Use mark book data and final exam breakdown to determine how well the class as a whole performed on the curriculum expectations.
2. As an individual, highlight each of the curriculum expectations based on how well the class as a whole performed. Use different colour highlighters as identified below to categorize performance.

Category	Colour
Area of strength	Green
Area requiring improvement	Pink
Neither an area of strength or area requiring improvement	Yellow
Not evaluated	No colour

3. In subject groups, review similarities and differences in student performance on specific expectations and discuss possible reasons for these.
4. As a team, within subject group, determine area of greatest need based on the evidence gathered and discussed today.

February 10, 2009

Appendix C – Cross-Curricular Summary of Student Performance by Assessment Strategy





Appendix D – Summary of Student Performance by Curriculum Expectations as Identified by English Department

Gather and Analyze Evidence

Student Performance by Curriculum Expectations

SUBJECT GROUP SUMMARY	
Areas of Strength	Areas Requiring Improvement
Develop reading and viewing strategies to understand and make connections	Read and demonstrate an understanding of a variety of informational and literary texts
Read and recognize a variety of short, engaging and authentic text forms	Organize ideas and information to write for an intended purpose and audience
Read and demonstrate an understanding of a variety of graphic texts	Draft and revise their writing using variety of literary and stylistic elements
Generate and gather ideas and information	Use editing, proofreading and publishing skills and strategies, and knowledge of language conventions, to correct errors, refine expression, and present effectively
Draft and revise their writing using variety of graphic forms	

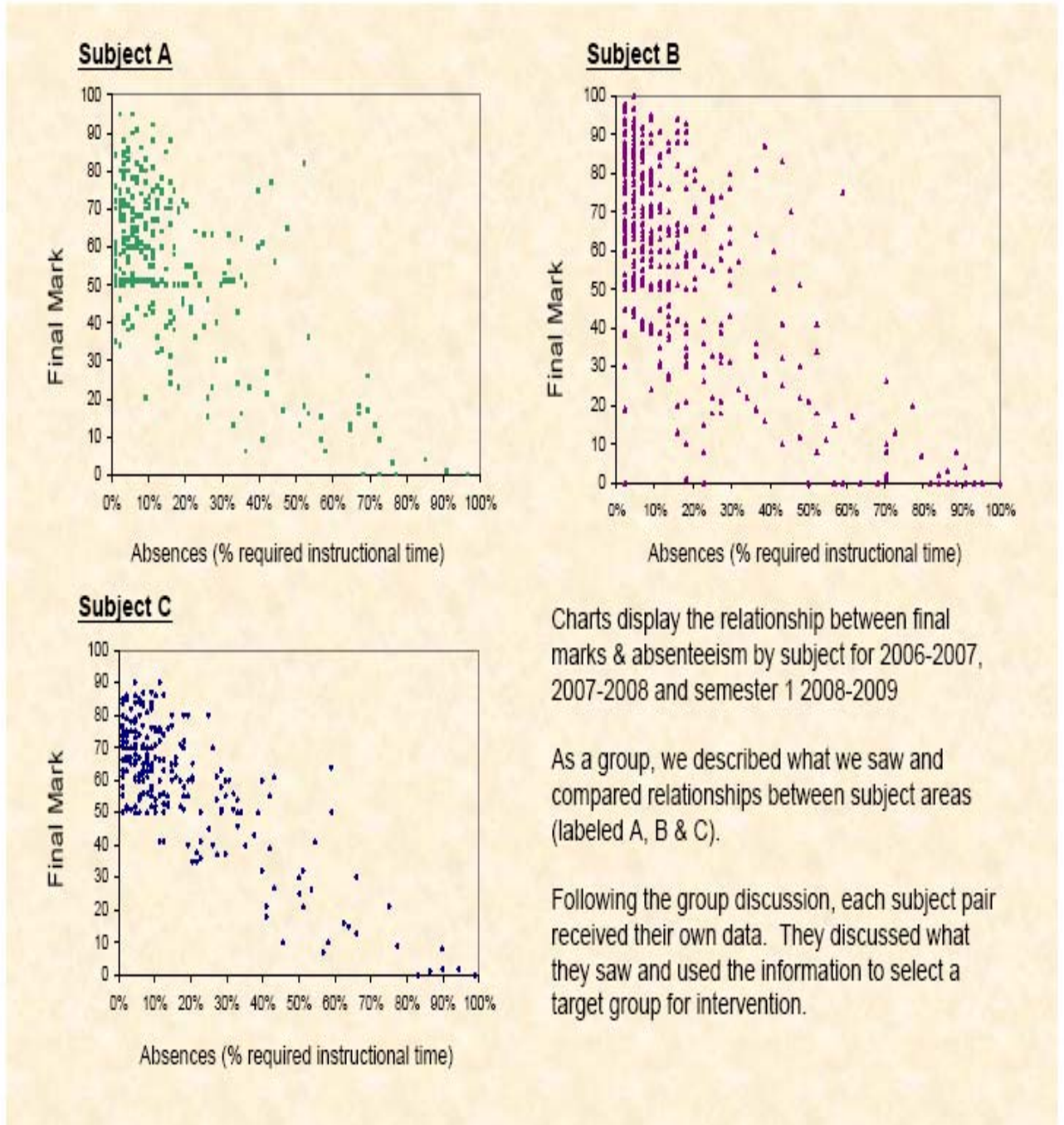
Appendix E – Sample of Cross-Curricular Learning Needs Identified by PLC Members

Use Evidence to Identify and Prioritize Student Learning Needs

1. In subject pairs, identify top 3 subject specific needs
2. In larger group, discuss cross curricular learning needs

Cross-Curricular Learning Needs (<i>sample of identified needs</i>)	
Analytical Thinking	<ul style="list-style-type: none"> • are we doing our students justice by not challenging them?
Communication Skills	<ul style="list-style-type: none"> • basic subject specific vocabulary • large ELL population
Meta cognition Skills	<ul style="list-style-type: none"> • ability to reflect and draw on their own learning, experiences and prior learning
Organizational & Test Taking Skills	<ul style="list-style-type: none"> • note taking, test preparation and test writing
Reading Skills	<ul style="list-style-type: none"> • have mechanical ability • struggle accessing prior knowledge and making connections • lack of prior knowledge? • relevance of material to students prior experiences?
"Elephant in the room" = ATTENDANCE ISSUES	

Appendix F – Scattergram Examples Presented at PLC Meeting





Appendix G – Sample Learning Plan Template

Learning Plan Template

Goal	
Target Group	
Prioritized Learning Needs	
Modified Practice to Meet Student Learning Needs	
1. Curriculum Expectations to be met in 2-4 week learning block.	
2. Select/develop Diagnostic Assessment	
3. Develop Summative Evaluation tool (document some pre/post and new learning)	
4. Select Strategies that address identified learning needs	
5. Identify methods to document implementation and modification	
6. Select/develop Formative Assessment	
7. Identify required resources	



Appendix H – Electronic Survey for Teachers Participating in PLC: Page One

Grade 10 Applied Team

1. Grade 10 Applied Team - Feedback Survey

As a staff member directly involved with grade 10 applied compulsory courses, you were asked to participate on a working team during Semester 2 of the 2008-2009 school year. The objectives of this Grade 10 Applied Team were to collaboratively identify student learning needs and develop learning plans to address these needs.

The following survey asks for your views about the process used to fulfill the objectives stated above. It should approximately 10 - 15 minutes to complete.

Information provided by you and your colleagues will be summarized and used to assist with planning for next school year.

In your opinion, what has been the most beneficial aspect of the Grade 10 Applied Team...

- 1. ...for your students?**
- 2. ...for you as a teacher?**
- 3. ...for your department?**
- 4. ...for the school?**

In your opinion, what has been the most challenging aspect of the Grade 10 Applied Team...

- 5. ...for your students?**
- 6. ...for you as a teacher?**
- 7. ...for your department?**
- 8. ...for the school?**



Appendix H - Electronic Survey for Teachers Participating in PLC: Page Two

Grade 10 Applied Team

9. If another school wanted to develop a similar working team, how could the process be improved?



Appendix H - Electronic Survey for Teachers Participating in PLC: Page Three

Grade 10 Applied Team

2. PLC Model for 2009-2010

The following set of questions asks for your input on establishing a working team model for the 2009-2010 school year.

1. What student group should be targeted? (please specify grades, levels, and subjects)
eg. This year the focus was on students enrolled in grade 10 applied compulsory courses.

2. Who should participate? (Check all that apply)

<input type="checkbox"/> Administrators	<input type="checkbox"/> Research and Assessment Associates
<input type="checkbox"/> Department Heads	<input type="checkbox"/> Student Success Teachers
<input type="checkbox"/> Guidance Counsellors	<input type="checkbox"/> Students
<input type="checkbox"/> Learning Coordinators	<input type="checkbox"/> Teaching Staff

Other (please specify)

3. Who should take the lead in planning and facilitating the process? (Check all that apply)

<input type="checkbox"/> Administrators	<input type="checkbox"/> Research and Assessment Associates
<input type="checkbox"/> Department Heads	<input type="checkbox"/> Student Success Teachers
<input type="checkbox"/> Guidance Counsellors	<input type="checkbox"/> Students
<input type="checkbox"/> Learning Coordinators	<input type="checkbox"/> Teaching Staff

Other (please specify)

4. How often should the working team meet?

5. When should the working team start meeting for the 2009-2010 school year?

6. What are some realistic goals for the working team?



Appendix H - Electronic Survey for Teachers Participating in PLC: Page Four

Grade 10 Applied Team

7. Given the opportunity to participate on a similar team next year, would you be interested?

Yes

No

Comments

8. Please include any additional observations, comments or suggestions.